
Begonia caparaoensis (Begoniaceae), a New Endemic Species from the Atlantic Forest in the State of Minas Gerais, Brazil

Eliane de Lima Jacques

Departamento de Botânica, Universidade Federal Rural do Rio de Janeiro, BR-465 Km 7, Caixa Postal 74582, Seropédica, 23890-970 Rio de Janeiro, Brazil. ejacques@ufrj.br

Ludovic Jean Charles Kollmann

Museu de Biologia Prof. Mello Leitão, Av. José Ruschi 4, Santa Teresa, 29650-000 Espírito Santo, Brazil. ludovic@limainfo.com.br

ABSTRACT. A new narrow endemic species of *Begonia* L. (Begoniaceae) from the Atlantic Forest of Brazil is described and illustrated. *Begonia caparaoensis* E. L. Jacques & L. Kollmann occurs in a small area of Cachoeira Bonita, along the coast of the José Pedro River (20°24'29"S, 41°50'29"W), at the Parque Nacional do Caparaó, Minas Gerais, Brazil, growing on rocky outcrops. Diagnostic characters, description, detailed illustration, and taxonomic comments are given. *Begonia caparaoensis* resembles *B. jureiensis* S. J. Gomes da Silva & Mamede, which shares its peltate leaf blades, bilamellate placentae, and obovate anthers, but is easily distinguished by its leaves with serrulate margins (vs. dentate) and its smaller stipules (ca. 7 × 9 mm vs. ca. 3 × 1.5 cm). *Begonia caparaoensis* is identified as Critically Endangered (CR B2a) according to IUCN Red List criteria.

RESUMO. Uma nova espécie de *Begonia* L. (Begoniaceae) endêmica da Mata Atlântica do Brasil é descrita e ilustrada. *Begonia caparaoensis* E. L. Jacques & L. Kollmann ocorre num pequeno trecho da Cachoeira Bonita, às margens do Rio José Pedro (20°24'29"S, 41°50'29"W), no Parque Nacional do Caparaó, Minas Gerais, Brasil, crescendo em formações rochosas. Caracteres diagnósticos, descrição, ilustração detalhada e comentários taxonômicos são apresentados. *Begonia caparaoensis* assemelha-se a *B. jureiensis* S. J. Gomes da Silva & Mamede, com a qual compartilha a lâmina foliar peltada, a placenta bilamelada e as anteras obovadas, mas é facilmente distinta pelas folhas com margem serrulada (vs. dentada) e pelas estípulas menores (ca. 7 × 9 mm vs. ca. 3 × 1.5 cm). *Begonia caparaoensis* é incluída na categoria Criticamente em Perigo (CR B2a) de acordo com os critérios da IUCN.

Key words: Atlantic Forest, *Begonia*, Begoniaceae, Brazil, IUCN Red List.

The genus *Begonia* L. (Begoniaceae) has approximately 1400 named species distributed primarily in

the tropical and subtropical areas of the world, and within this area is absent only from Australia (Forrest & Hollingsworth, 2003; Clement et al., 2004; Forrest et al., 2005). It is well represented in Brazil, with approximately 200 species, and is found in almost all ecosystems except mangroves. In Brazil, one of the centers of distribution of the genus is the Atlantic Forest (Jacques, 1996; Gomes Silva & Mamede, 2000; Jacques & Mamede, 2004, Souza & Lorenzi, 2005). This genus is morphologically variable (Jacques & Mamede, 2005) but can be characterized by its often asymmetric leaf shape, four staminate tepals and five pistillate tepals, an inferior ovary with axilar placentation, dry 3-winged fruit, and seeds with a lid and collar cells.

Research in the GFJP herbarium and fieldwork in the Parque Nacional do Caparaó in the state of Minas Gerais revealed the existence of a previously undescribed species, which is described here.

Begonia caparaoensis E. L. Jacques & L. Kollmann, sp. nov. TYPE: Brazil. Minas Gerais: Alto Caparaó, Parque Nac., Vale Encantado e Cachoeira Bonita, 1890 m, 26 Feb. 2004, L. S. Leoni 5625 & A. Chautems (holotype, GFJP; isotype, MO). Figure 1.

Haec species quoad laminam foliarem peltatam, antheras obovatas etiam placentas bilamellatas *Begoniae jureiensi* S. J. Gomes da Silva & Mamede similis, sed ab ea foliis serrulatis (nec dentatis), stipulus majoribus atque stylis complanatis biramosis facile distinguitur.

Herbs rupicolous, puberulent, with an indumentum of simple and glandular trichomes, 15–40 cm tall; subterranean stems consisting of a tubercle-like structure, with very numerous adventitious roots; stems erect, internodes (2–)4–5 cm. Petioles terete, 9–11 cm, light pink to purplish red; stipules white or reddish, ca. 7 × 9 mm, deciduous, ciliate at margin; lamina (5–)9–21 × (5–)8.5–20 cm, ovate, peltate, in

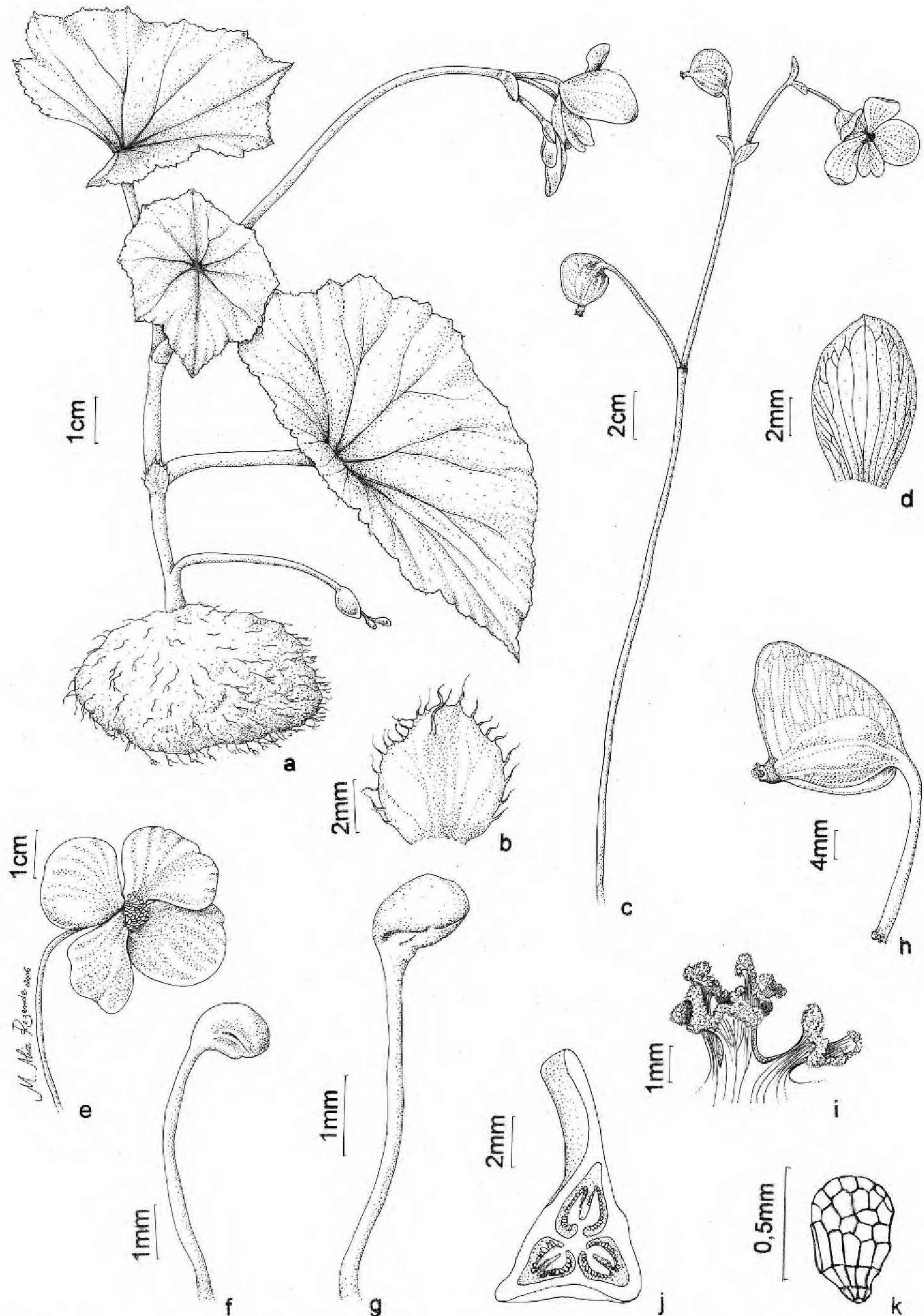


Figure 1. *Begonia caparaoensis* E. L. Jacques & L. Kollmann. —a. Habit. —b. Stipule. —c. Inflorescence. —d. Bract. —e. Staminate flower. —f. Stamens, side view. —g. Stamens, anther recurved. —h. Capsule. —i. Apex of the style branch. —j. Ovary in transverse section. —k. Seed. Drawn from the holotype *L. S. Leoni* 5625 & *A. Chautems* (GFJP).

vivo with a small central depression, shiny green, minutely pubescent on both surfaces, with an indumentum of simple and glandular trichomes, apex acute, margin lobate, serrulate, 8 primary veins,

palmatinerved. Cymes (13–)17–30 cm, 3 to 5 flowers, 3- to 4-branched, peduncles reddish green; bracts persistent, 1–1.4 × 0.7–1.2 cm, ovate, margins with glandular trichomes, outer surface reddish green,

inner surface pink. Staminate flowers ca. 4 cm, pedicels 1.7–3.4 cm, purplish red, tepals white, tinged pale pink, the outer pair (1.5–)2–3 × (1.6–)2–3 cm, orbiculate, the inner pair 1.2–2.4 × 1.5–2.4 cm, obovate, stamens (49 to)80 to 100, 5–9 mm, yellow, filaments free, 4–6 mm, anthers obovate, 1–2 mm, recurved, extrorse, yellow, the connective scarcely projecting. Pistillate flowers 3.5–4 mm, pedicels 2.5–3 cm to 5.2 cm in mature fruits, tepals 5, unequal, 1.5–2.6 × 1.3–2.6 cm, white, tinged pale pink, oblong to obovate, apex obtuse to orbiculate, with glandular microscopic trichomes, prophylls 1(to 2) or absent, elliptic, margins fimbriate, 4–5 × 2–3 mm, white to lightly pink, styles 3, spirally twisted, 2-branched, stigma with a flabelliform base, yellow, with stigmatic papillae along margins. Ovary trilobate, reddish, 10–12 mm, placentation axillary, placentae bilamellate with the ovules on both sides of lamellae. Immature capsules triolate, 1–2.5 × 1.1–2.2 cm (including wings), glossy red, with glandular trichomes, peduncles (2–)2.5–5 cm, wings unequal, the largest wing (5–)10–15 mm tall, the smallest wing 1–2 mm tall; seeds ca. 0.5 × 0.25 mm, oblong, cylindrical.

Distribution, habitat, and phenology. *Begonia caparaoensis* is endemic to Parque Nacional do Caparaó, Minas Gerais, Brazil (20°24'29"S, 41°50'29"W), where a number of endemic species have recently been described, including *Vanhouttea leonii* Chautems (Gesneriaceae). *Begonia caparaoensis* grows in rocky outcrops, in rock crevices, near waterfalls and rivers in sunlit places, at altitudes between 1600 and 1890 m. During humid months, *B. caparaoensis* receives continuous mist from the adjacent waterfall, while during the dry months this moisture stops and the plants lose their stem and leaves so that only the tuberous part remains. This same phenomenon of losing external parts has also been observed, for example, in *B. alchemilloides* Meisner ex A. DC. and *B. quetamensis* L. B. Smith & B. G. Schubert (Jacques, 2002). The new species was observed associated with *Sinningia* Nees, *Peperomia* Ruiz & Pavón, pteridophytes, and bryophytes.

IUCN Red List category. Due to the endemic distribution of *Begonia caparaoensis* in the Atlantic Forest from Minas Gerais State and the area of occupancy estimated to be less than 10 km², it seems appropriate to identify this species as Critically Endangered (CR B2a) according to IUCN Red List criteria (IUCN, 2001).

Etymology. The specific epithet alludes to the type locality (Parque Nacional do Caparaó), a well-preserved area of the Atlantic Forest in the state of Minas Gerais, Brazil.

Discussion. Among eight Brazilian species of *Begonia* with peltate blades and bilamellate placentae (*Begonia egregia* N. E. Brown, *B. espiritosantensis* E. L. Jacques & Mamede, *B. ibitiocensis* E. L. Jacques & Mamede, *B. jureiensis* S. J. Gomes da Silva & Mamede, *B. lealii* Brade, *B. lubbersii* E. Morren, *B. paulensis* A. DC., and *B. santoslimae* Brade; Jacques, 2002), *B. caparaoensis* is morphologically similar to *B. jureiensis*, which is endemic to Serra da Juréia, a well-preserved area of the Atlantic Forest in the southern coast of São Paulo State, Brazil. However, *B. jureiensis* is characterized by leaves with dentate margins, larger stipules (ca. 3 × 1.5 cm), and a flattened, branched style that is almost kidney-shaped.

Acknowledgments. We thank Maria Alice Rezende for preparing the illustrations; the curator and staff of the herbarium GFJP; L. S. Leoni for providing representative material for the description of the new species; and Marcos Sobral for the Latin diagnosis.

Literature Cited

- Clement, W. L., M. C. Tebbit, L. L. Forrest, J. E. Blair, L. Brouillet, T. Eriksson & S. W. Swensen. 2004. Phylogenetic position and biogeography of *Hillebrandia sandwicensis* (Begoniaceae): A rare Hawaiian relict. *Amer. J. Bot.* 91: 905–917.
- Forrest, L. L. & P. M. Hollingsworth. 2003. A recircumscription of *Begonia* based on nuclear ribosomal sequences. *Pl. Syst. Evol.* 241: 193–211.
- , M. Hughes & P. M. Hollingsworth. 2005. A phylogeny of *Begonia* using nuclear ribosomal sequence data and morphological characters. *Syst. Bot.* 30(3): 671–682.
- Gomes da Silva, S. J. & M. C. H. Mamede. 2000. A new species of *Begonia* (Begoniaceae) from the Atlantic Coastal Forest in the State of São Paulo, Brazil. *Novon* 10: 22–25.
- IUCN. 2001. IUCN Red List Categories and Criteria, Version 3.1. Prepared by the IUCN Species Survival Commission. IUCN, Gland, Switzerland, and Cambridge, United Kingdom.
- Jacques, E. L. 1996. Begoniaceae. Pp. 93–133 in M. P. M. Lima & R. R. Guedes-Bruni (editors), *Reserva Ecológica de Macaé de Cima, Nova Friburgo, RJ—Aspectos Florísticos das Espécies Vasculares*, Vol. 2. Jardim Botânico do Rio de Janeiro, Rio de Janeiro.
- . 2002. *Estudos Taxonômicos das Espécies Brasileiras do Gênero Begonia L. (Begoniaceae) com Placenta Partida*. Tese de Doutorado, Instituto de Biociências, Universidade de São Paulo, São Paulo.
- & M. C. H. Mamede. 2004. Novelty in *Begonia* (Begoniaceae) from the coastal forests of Brazil. *Brittonia* 56(1): 75–81.
- & ———. 2005. Notas nomenclaturais em *Begonia* L. (Begoniaceae). *Revista Brasil. Bot.* 28: 579–583.
- Souza, V. C. & H. Lorenzi. 2005. *Botânica sistemática: Guia ilustrado para identificação das famílias de angiospermas da flora brasileira, baseado em APG II*. Instituto Plantarum, Nova Odessa, São Paulo.